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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
HENRY S. GRAVES, FORESTER

FOREST ATLAS

GEOGRAPHIC DISTRIBUTION

OF

NORTH AMERICAN TREES

PART I — PINES

BY GEORGE B. SUDWORTH, DENDROLOGIST

1913



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INTRODUCTION

This is the first part of a series of atlases which, when completed, will show the geographic distribution of all North American trees now known, exclusive of those occurring wholly in Mexico.¹

The ranges outlined for the Pines are based on all available published and unpublished data of reliable character, which has been drawn largely, however, from the unpublished field notes, unrecorded observations, and reports of Forest Service officials engaged in the exploration, surveying, and administration of the 163 different National Forests now established, which aggregate 187,406,376 acres. To this data has also been added much unpublished information obtained from forest herbaria of the Forest Service and National Museum, Washington, D. C., the Arnold Arboretum, Jamaica Plain, Massachusetts, the Field Columbian Museum, Chicago, and the University of Nebraska, Lincoln. Much new and valuable range data has, moreover, been obtained from the copious field notes and specimens collected by members² of the Bureau of Biological Survey. No published work on North American trees contains this detailed information, to which future observations will, of course, add many new facts.

Extensive and continued lumbering operations with attending forest fires have so changed, and in some cases exterminated, parts of the original stand of most of our pines as to render it impracticable to show the commercial distribution of each species in connection with its botanical range. Moreover, for want at present of fuller and detailed records regarding the exact local occurrence of species within their general range, it has been necessary in most cases to outline only the territory within which a tree is to be found. These maps, therefore, indicate only the general occurrence of species within the prescribed areal limits, and have no reference to the density or continuity of growth.

Contrary to popular belief, our present knowledge and published records of the geographic range of North American trees is still very incomplete. Lack of space has doubtless prevented many writers from giving, with other essential facts about trees, more than very general information regarding range. It is true, also, that the meagerness of our information may be due to some extent to a disregard of the value of exact range data. For the forester's purposes, however, as it would seem to be also for other scientific purposes, it is highly important that much more accurate information be made available, and the simplest means of presenting this information is in the form of maps. While the most detailed descriptions of geographic range now published appear reasonably complete, their lack of completeness, from whatever cause, is clearly shown when an attempt is made to plot the data on a map. Thus such apparently satisfactory statements of the range of a tree as "From Maine to North Carolina and westward to Minnesota and Missouri" are too indefinite to permit even approximately accurate mapping of the area described.

Satisfactory progress toward the completion of our knowledge of the ranges of North American trees is distinctly dependent upon the cooperation of many observers. No one person can hope to accomplish so great a task from personal observations alone. Because officials of the Forest Service, and especially members of its District Offices, as well as other technical branches of the Department of Agriculture, are particularly interested and in the best position to help greatly in this work, they are likely in the future to contribute a fuller and more exact knowledge of the distribution of trees than any other equal number of field workers. It is hoped, therefore, that each member of this great body of investigators will do everything possible to perfect our present incomplete knowledge in this direction. Each of these trained observers can lend important aid by recording the different trees met with in various localities.

GEORGE B. SUDWORTH.

¹ An effort is being made to obtain reliable data, not now available, for mapping the ranges of Mexican forest trees, in which American manufacturers are much interested because a good many Mexican pines and hardwoods are being lumbered, and are likely to be cut still more extensively in the future, for American markets.

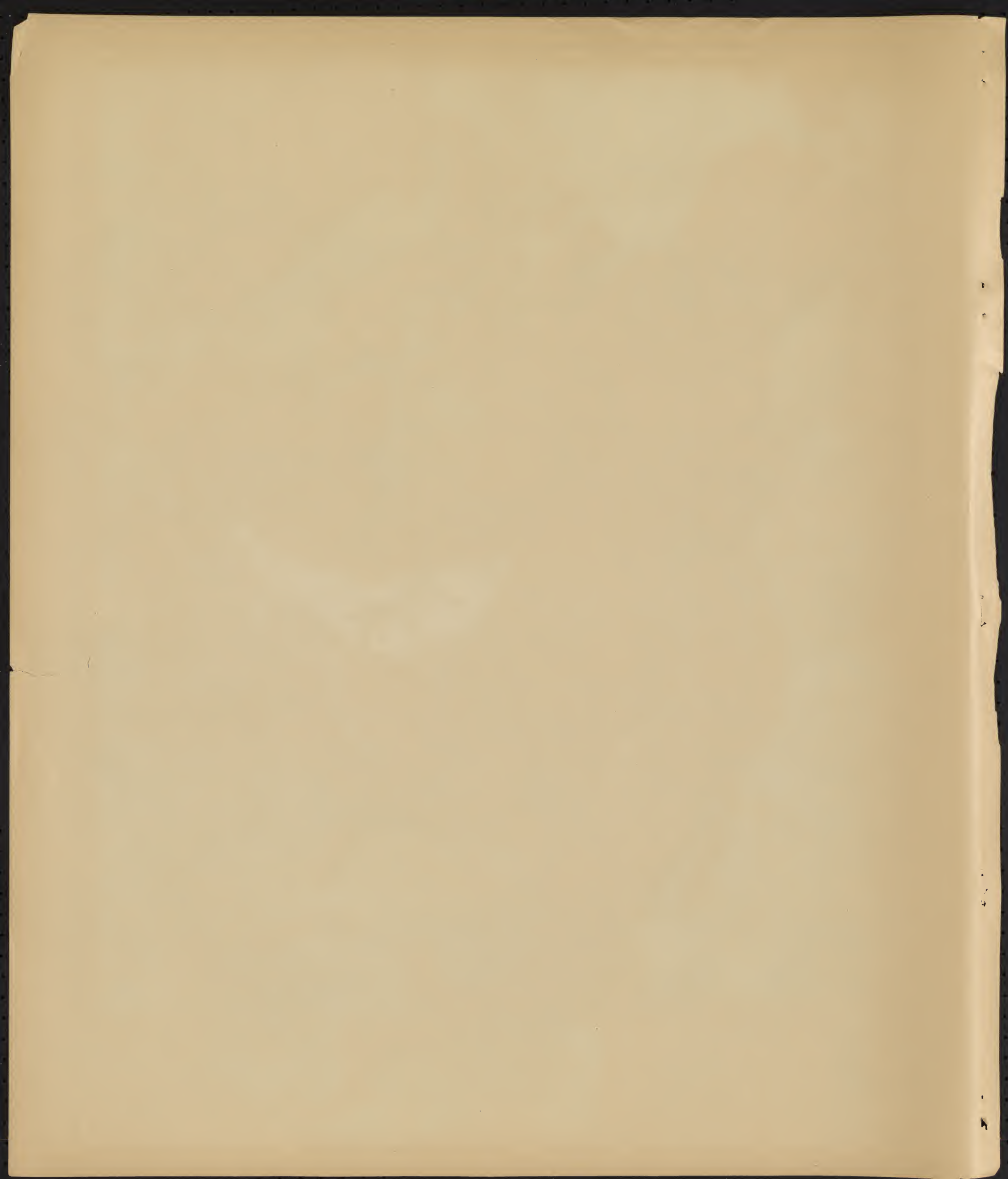
² The field notes of Dr. C. Hart Merriam, Dr. A. K. Fisher, Messrs. Vernon Bailey, A. H. Howell, W. L. McAtee, and E. A. Preble, have been especially rich in new material, for which grateful acknowledgment is here made.

LIST OF SPECIES

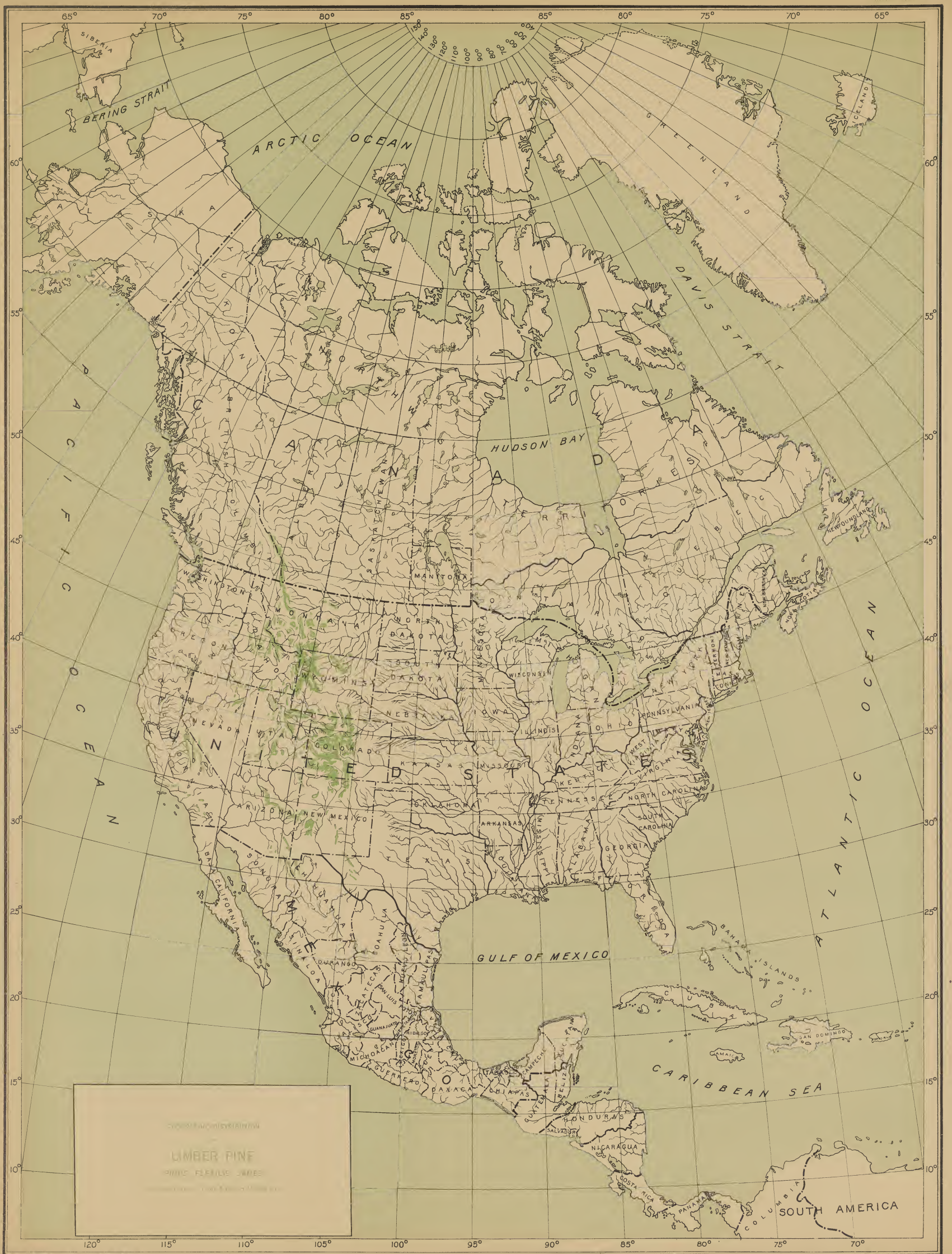
| COMMON NAME | SCIENTIFIC NAME | NO. OF MAP |
|------------------------------------|--|------------|
| White Pine | <i>Pinus strobus</i> Linn. | 1 |
| Silver Pine | <i>Pinus monticola</i> Dougl. | 2 |
| Sugar Pine | <i>Pinus lambertiana</i> Dougl. | 3 |
| Limber Pine | <i>Pinus flexilis</i> James | 4 |
| White-bark Pine | <i>Pinus albicaulis</i> Engelm. | 5 |
| Mexican White Pine | <i>Pinus strobiformis</i> Engelm. | 6 |
| Parry Pinon | <i>Pinus quadrifolia</i> Parl. | 7 |
| Mexican Pinon | <i>Pinus cembroides</i> Zucc. | 8 |
| Pinon | <i>Pinus edulis</i> Engelm. | 9 |
| Single-leaf Pinon | <i>Pinus monophylla</i> Torr. & Frem. | 10 |
| Foxtail Pine | <i>Pinus balfouriana</i> Murr. | 11 |
| Bristle-cone Pine | <i>Pinus aristata</i> Engelm. | 12 |
| Red Pine | <i>Pinus resinosa</i> Ait. | 13 |
| Torrey Pine | <i>Pinus torreyana</i> Parry | 14 |
| Arizona Pine | <i>Pinus arizonica</i> Engelm. | 15 |
| Western Yellow Pine | <i>Pinus ponderosa</i> Laws. (Includes <i>P. ponderosa scopulorum</i> Engelm.) | 16 |
| Apache Pine; "Mayr Pine | <i>Pinus apachea</i> Lemmon (= <i>P. mayriana</i> Sudw.) | 17 |
| Jeffrey Pine | <i>Pinus jeffreyi</i> "Oreg. Com." | 18 |
| Chihuahua Pine | <i>Pinus chihuahuana</i> Engelm. | 19 |
| Lodgepole Pine | <i>Pinus contorta</i> Loud. (Includes <i>P. murrayana</i>) | 20 |
| Gray Pine | <i>Pinus sabiniana</i> Dougl. | 21 |
| Coulter Pine | <i>Pinus coulteri</i> Lamb. | 22 |
| Monterey Pine | <i>Pinus radiata</i> Don | 23 |
| Knobcone Pine | <i>Pinus attenuata</i> Lemmon | 24 |
| Loblolly Pine | <i>Pinus taeda</i> Linn. | 25 |
| Pitch Pine | <i>Pinus rigida</i> Mill. | 26 |
| Pond Pine | <i>Pinus serotina</i> Michx. | 27 |
| Scrub Pine | <i>Pinus virginiana</i> Mill. | 28 |
| Sand Pine | <i>Pinus clausa</i> (Engelm.) Sargent | 29 |
| Table-mountain Pine | <i>Pinus pungens</i> Michx. f. | 30 |
| California Swamp Pine | <i>Pinus muricata</i> Don | 31 |
| Shortleaf Pine | <i>Pinus echinata</i> Mill. | 32 |
| Spruce Pine | <i>Pinus glabra</i> Walt. | 33 |
| Jack Pine | <i>Pinus divaricata</i> (Ait.) Du Mont de Cours. | 34 |
| Longleaf Pine | <i>Pinus palustris</i> Mill. | 35 |
| Cuban Pine; "Slash Pine" | <i>Pinus heterophylla</i> (Ell.) Sudworth | 36 |

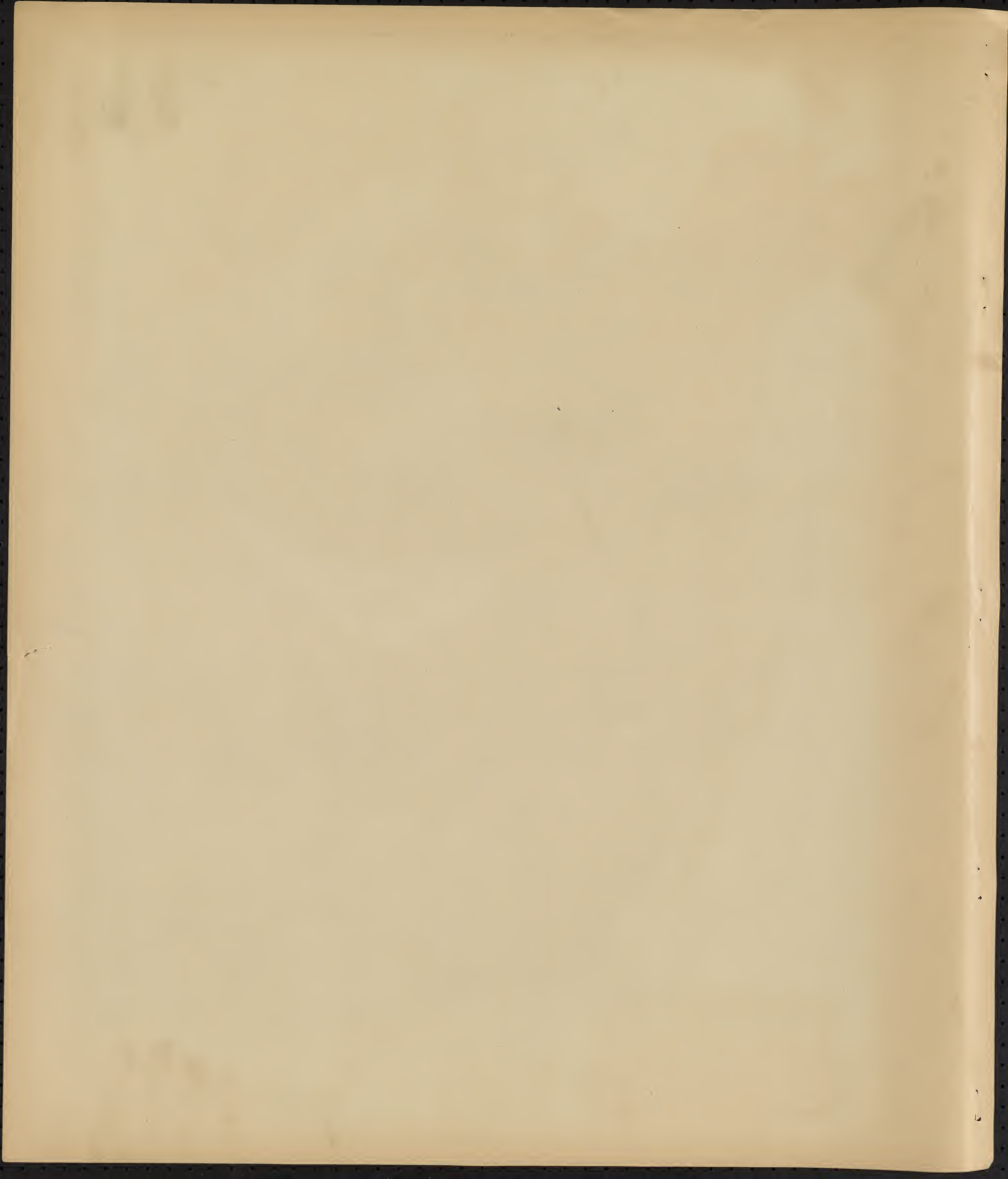








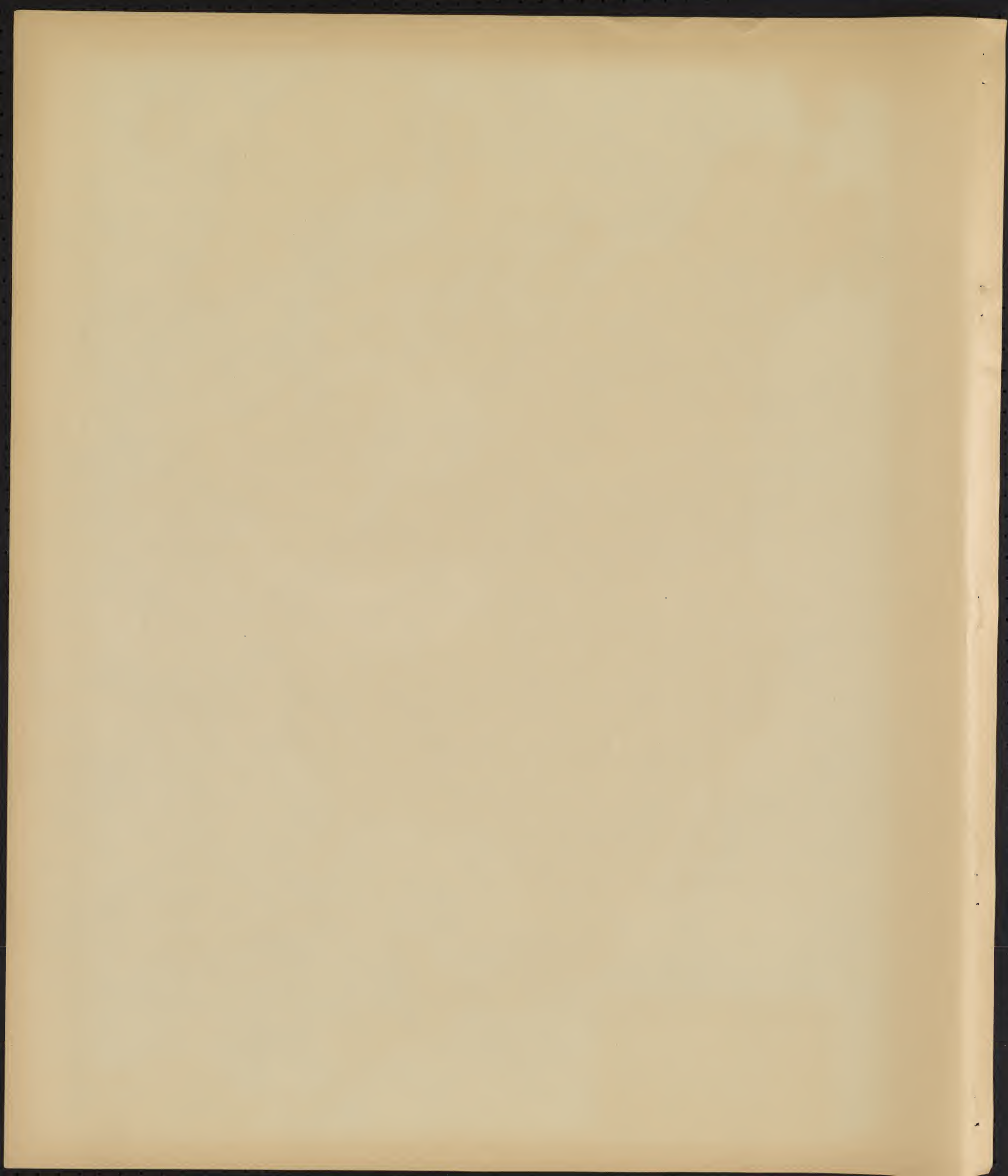






GEOGRAPHIC DISTRIBUTION
of
WHITE-BARK PINE
PINUS ALBICAULIS ENGELM.
Altitudinal range: From 5,000 to 12,000 feet

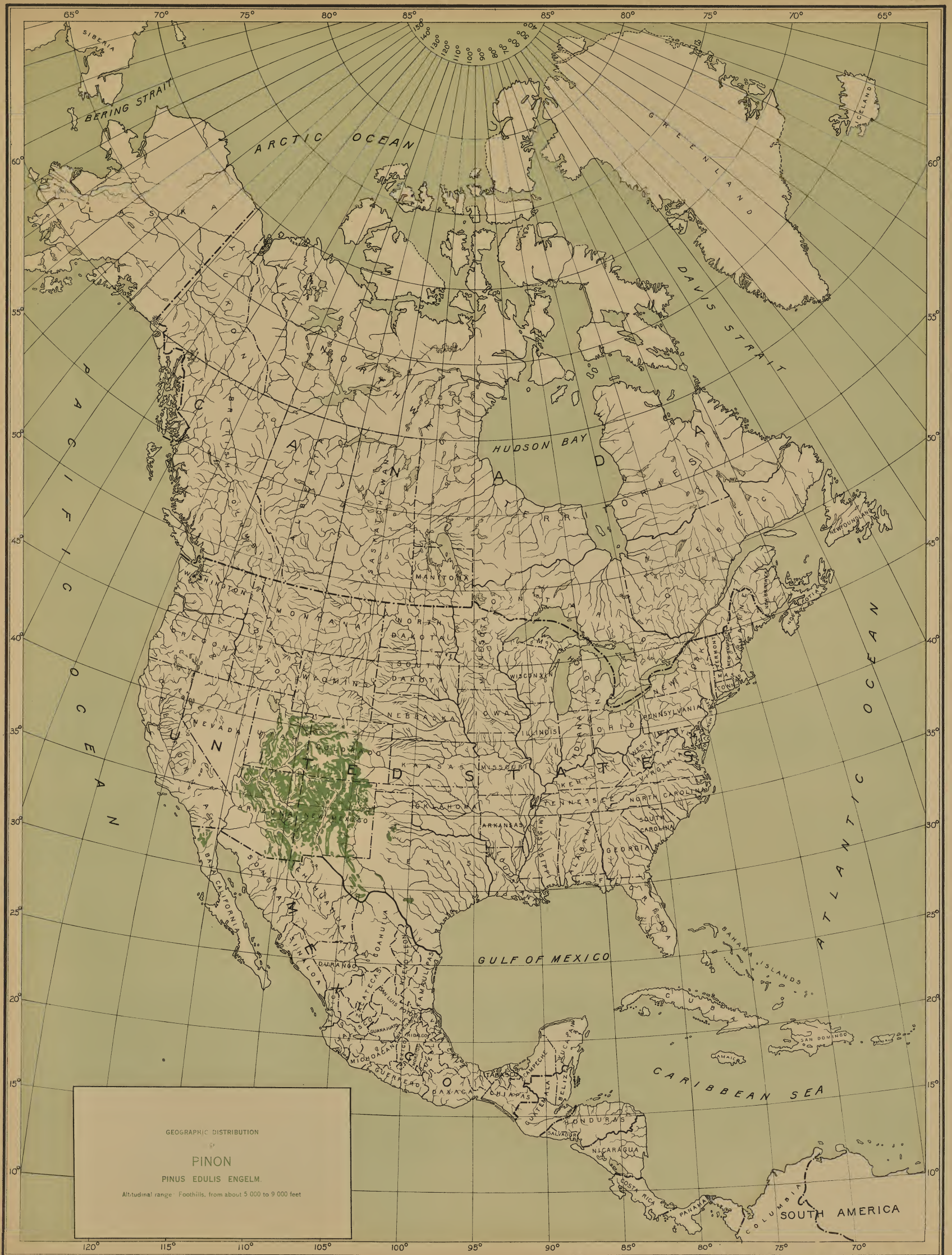


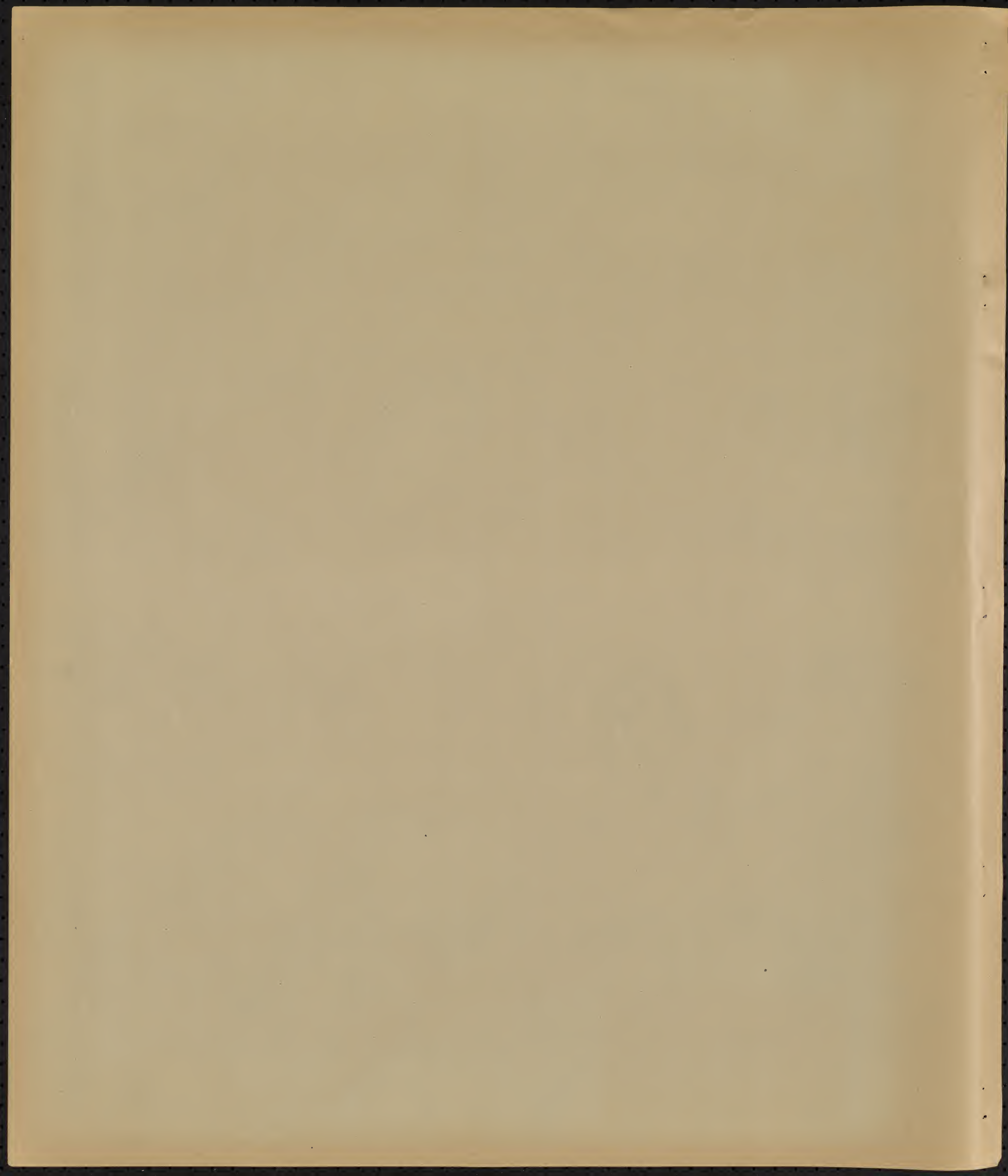






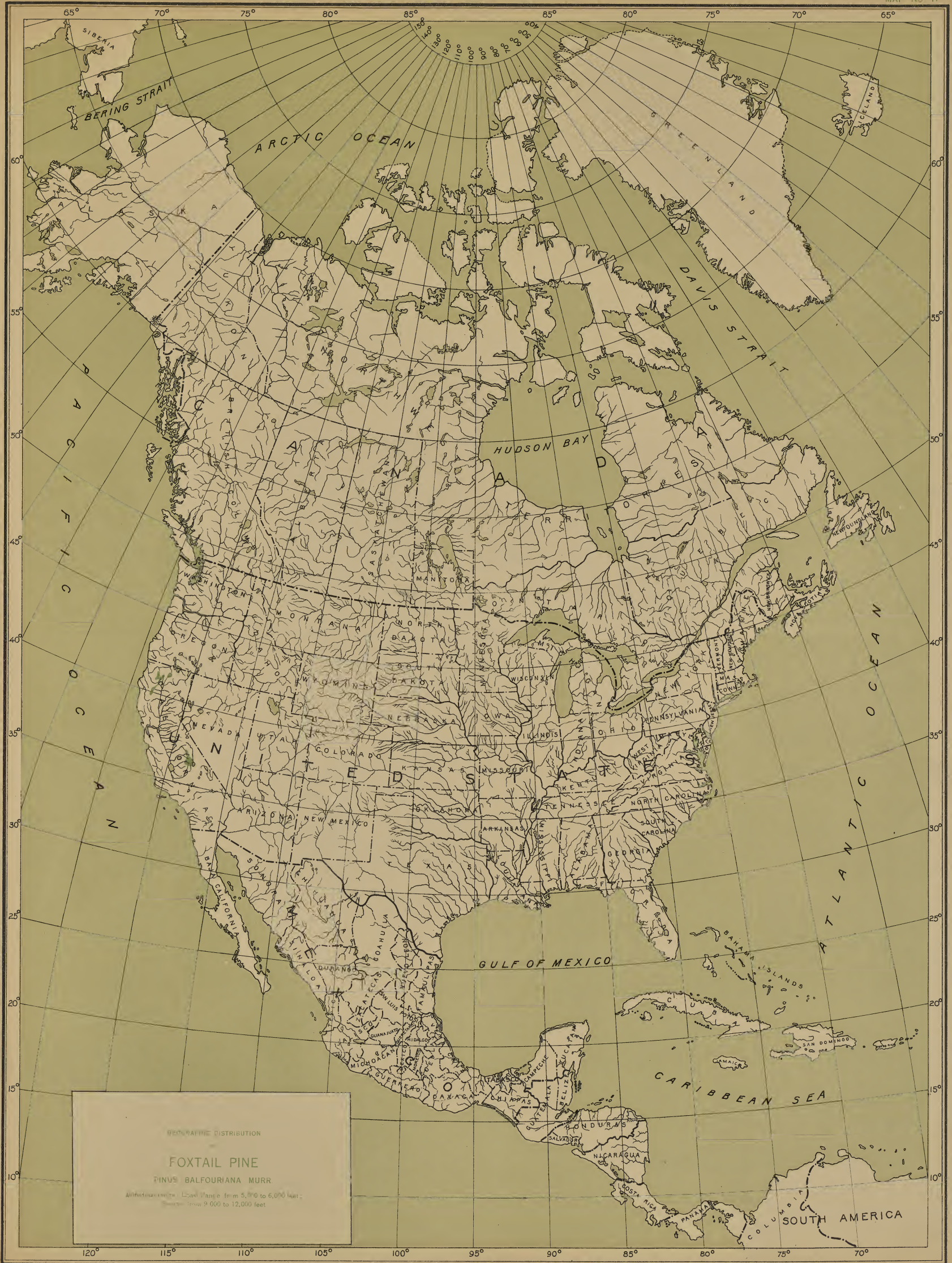


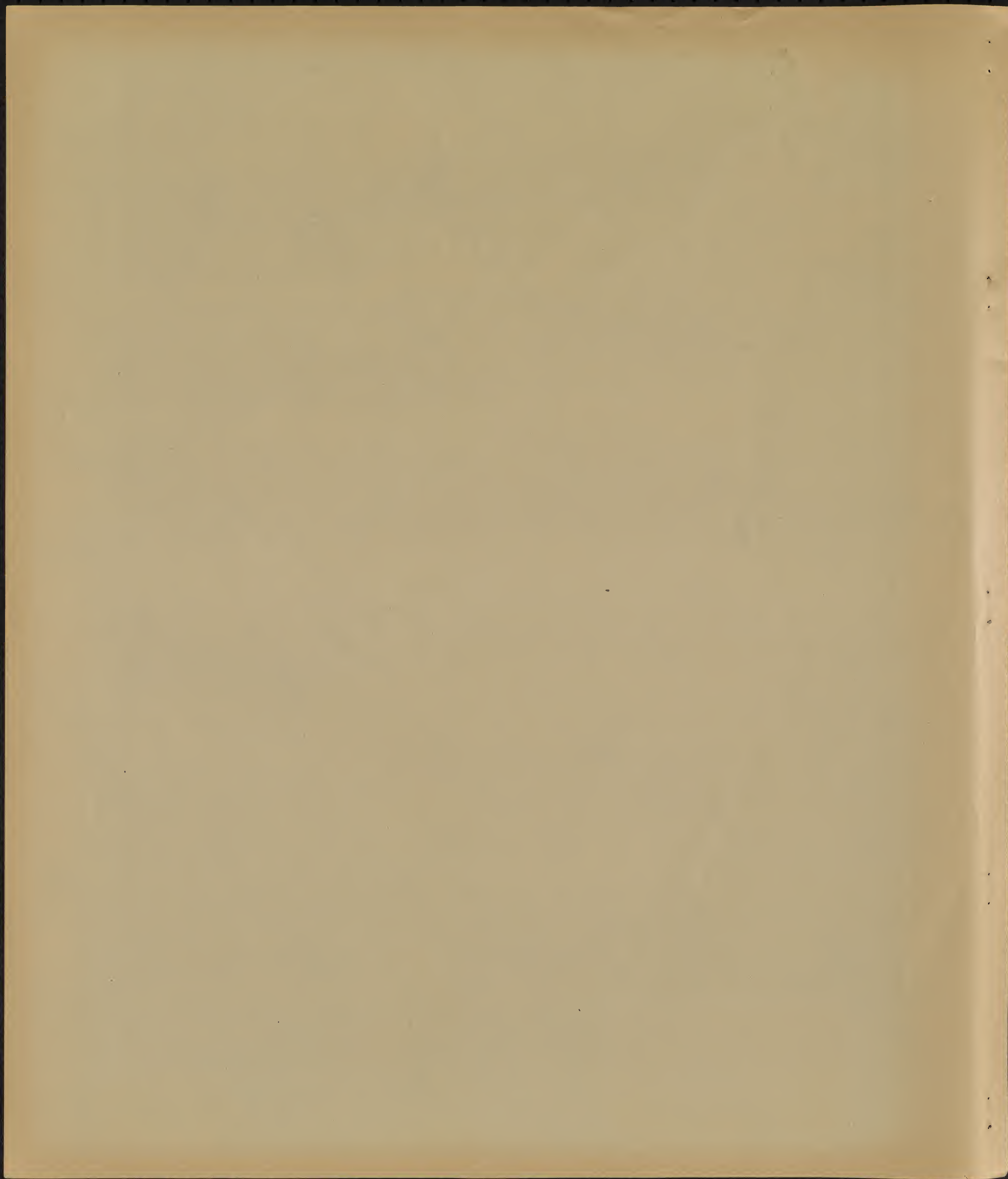








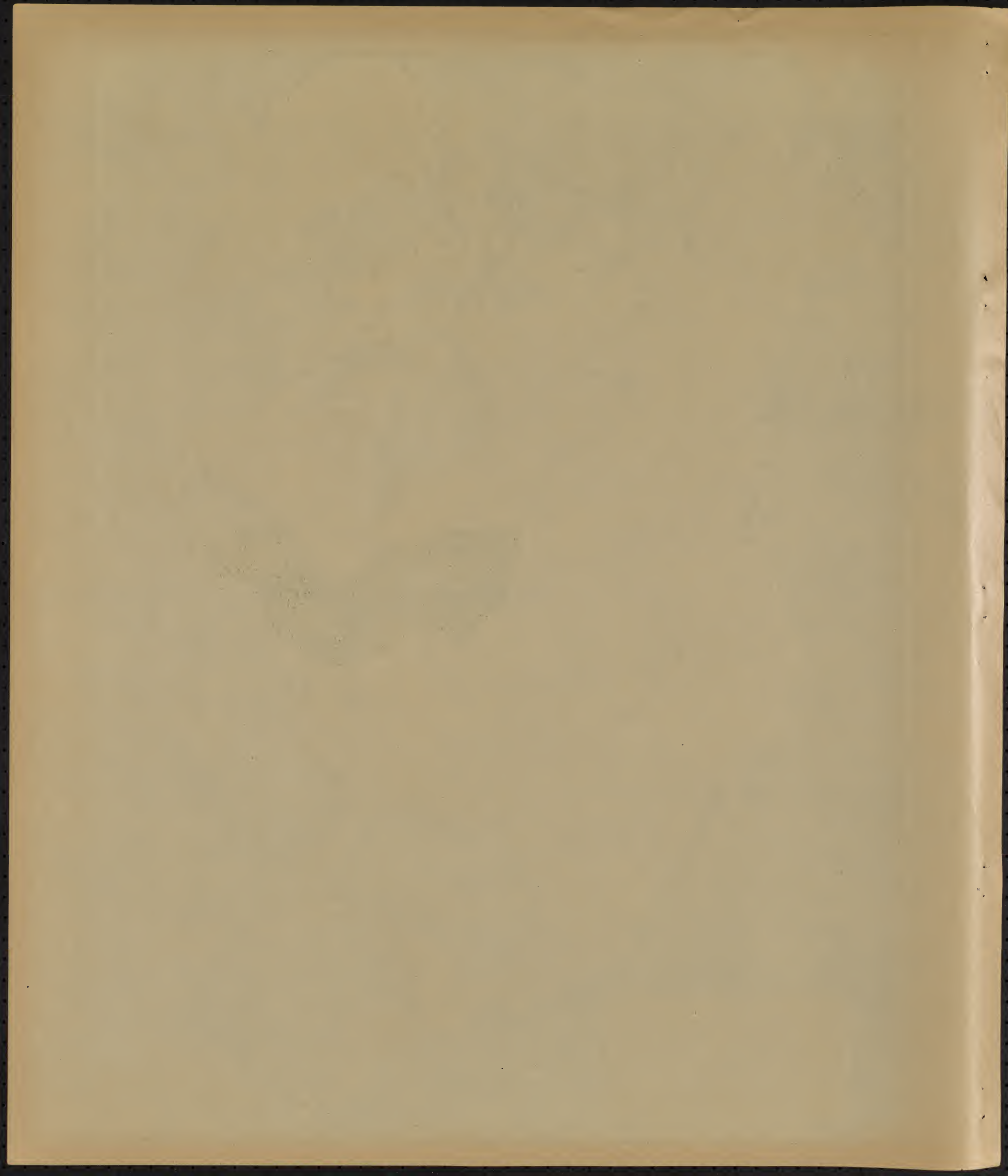




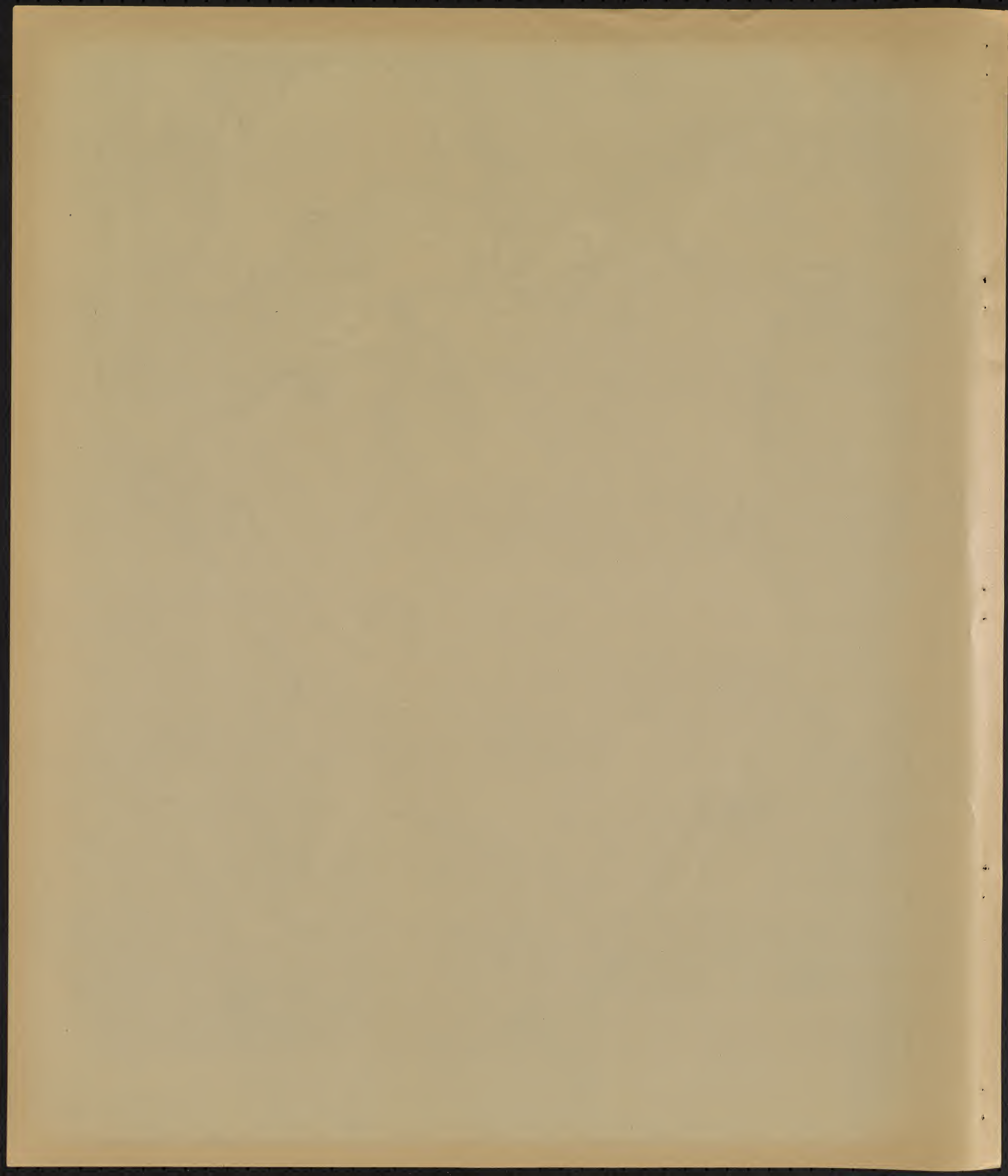








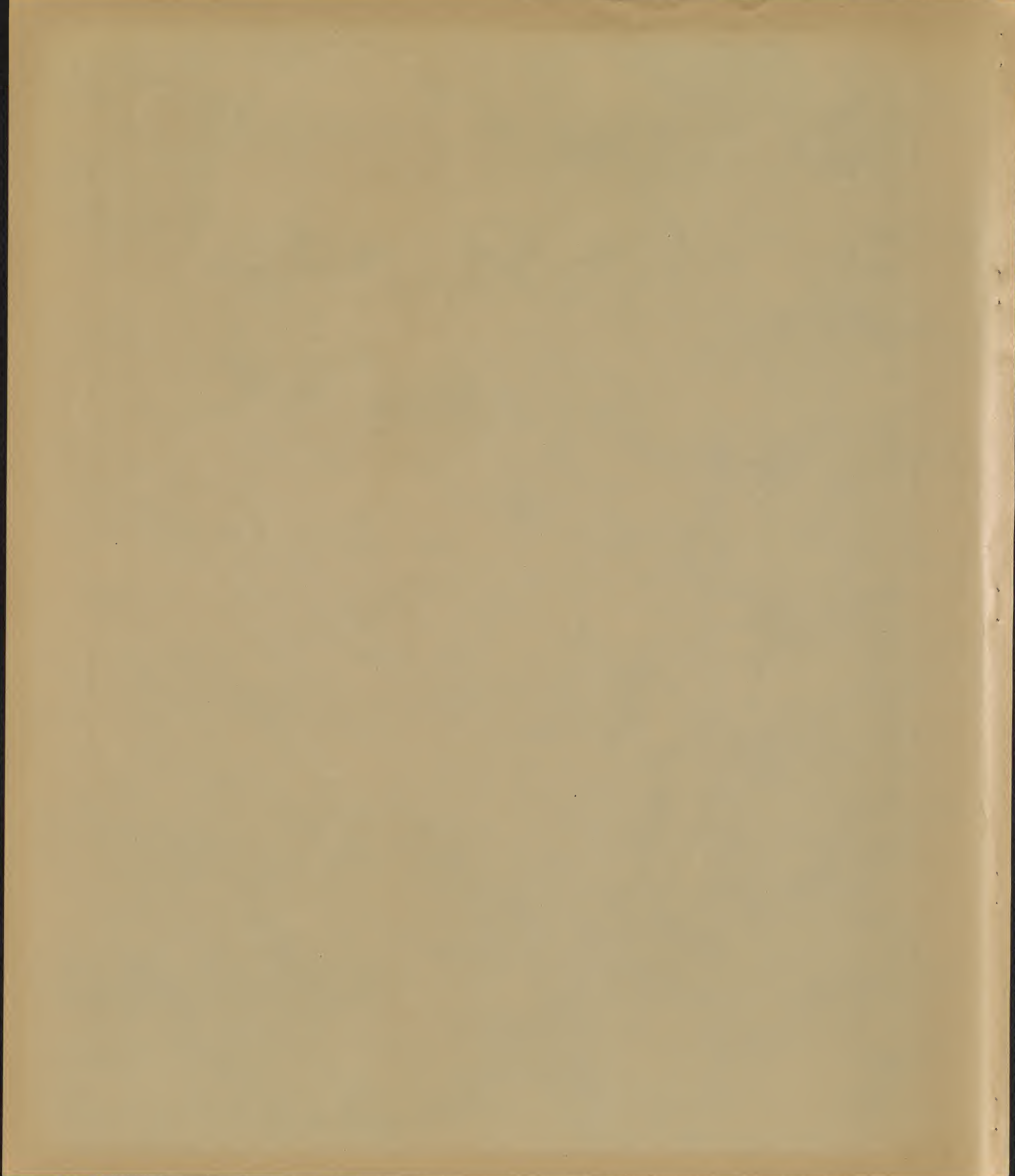




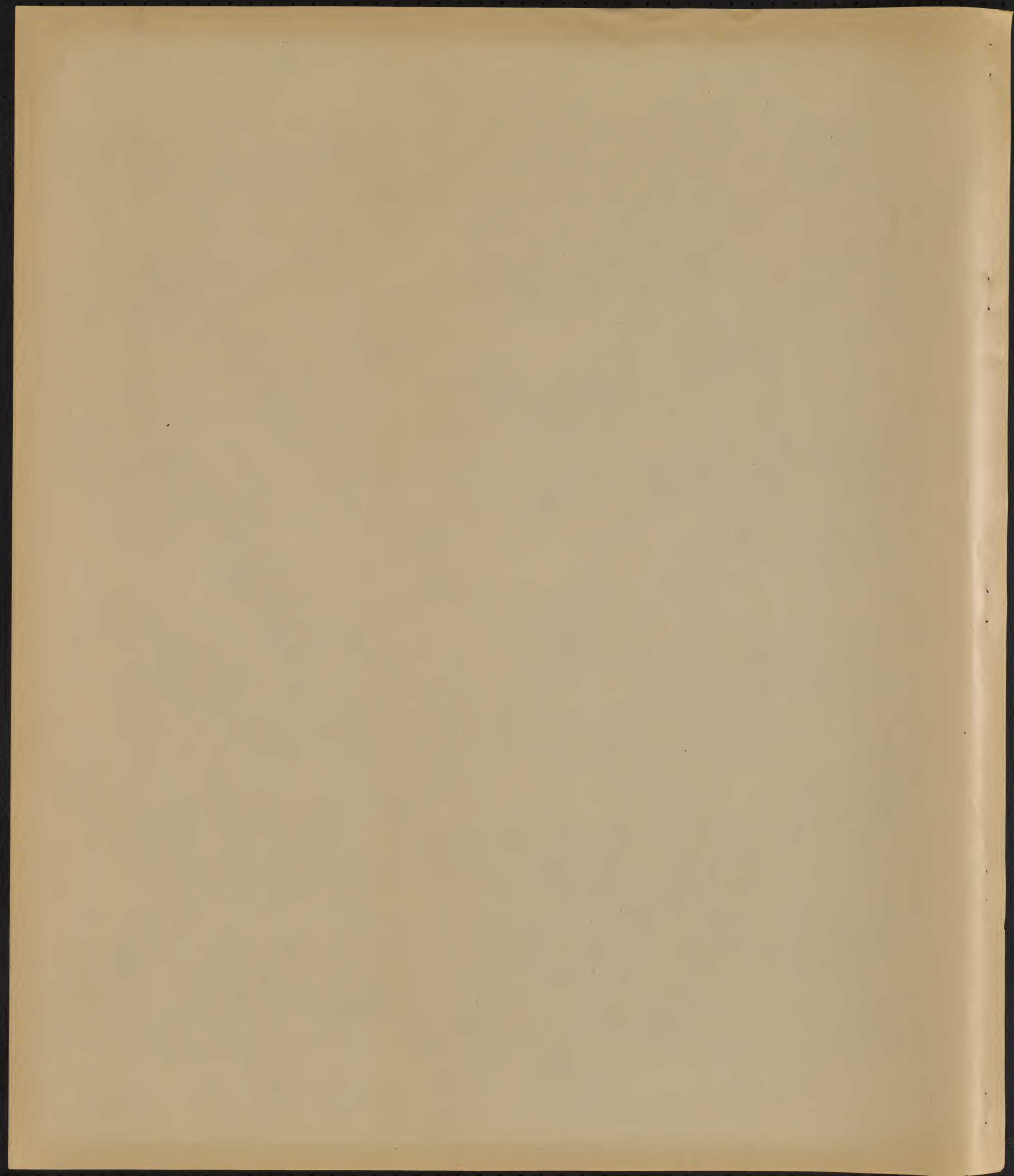


















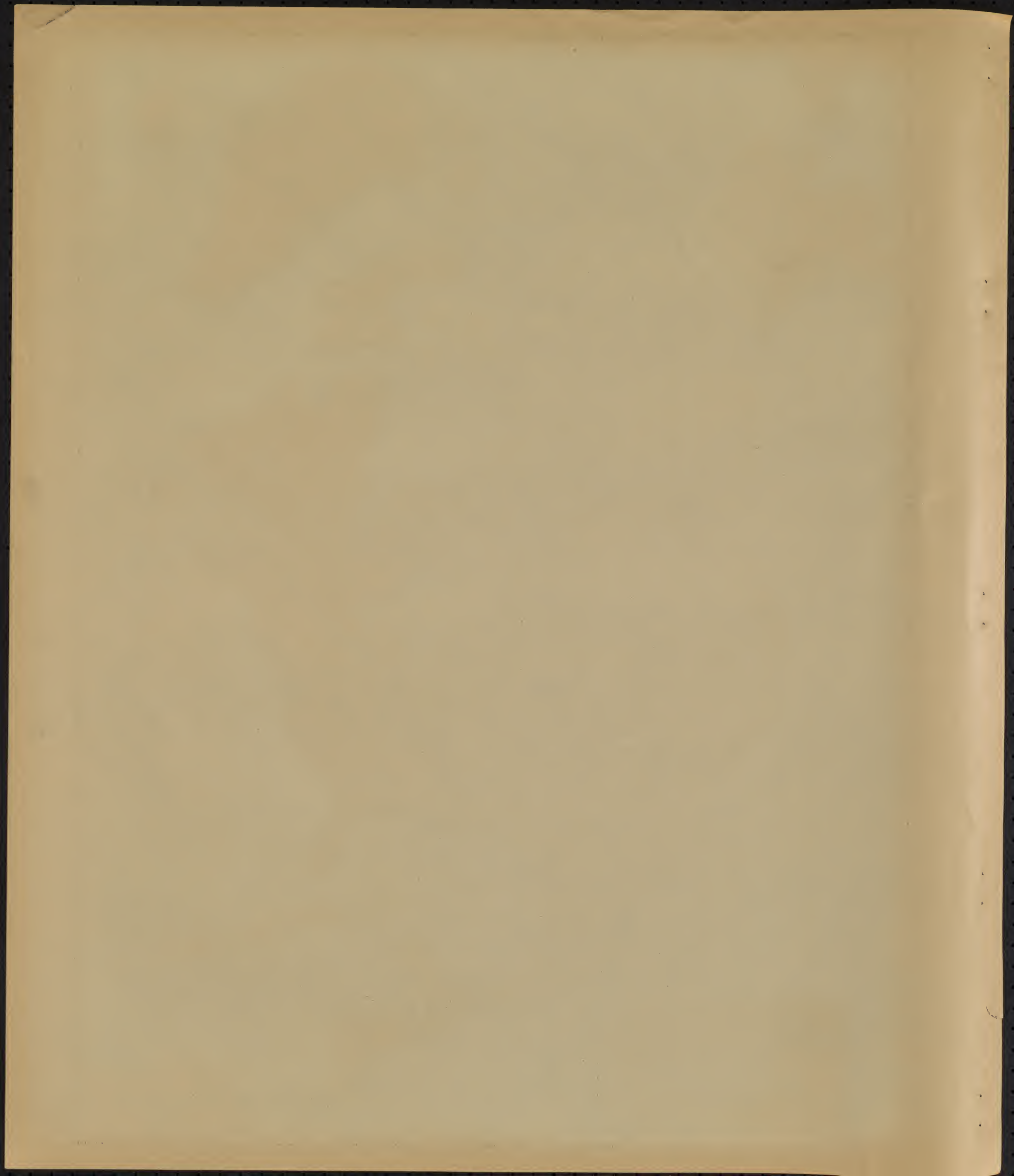






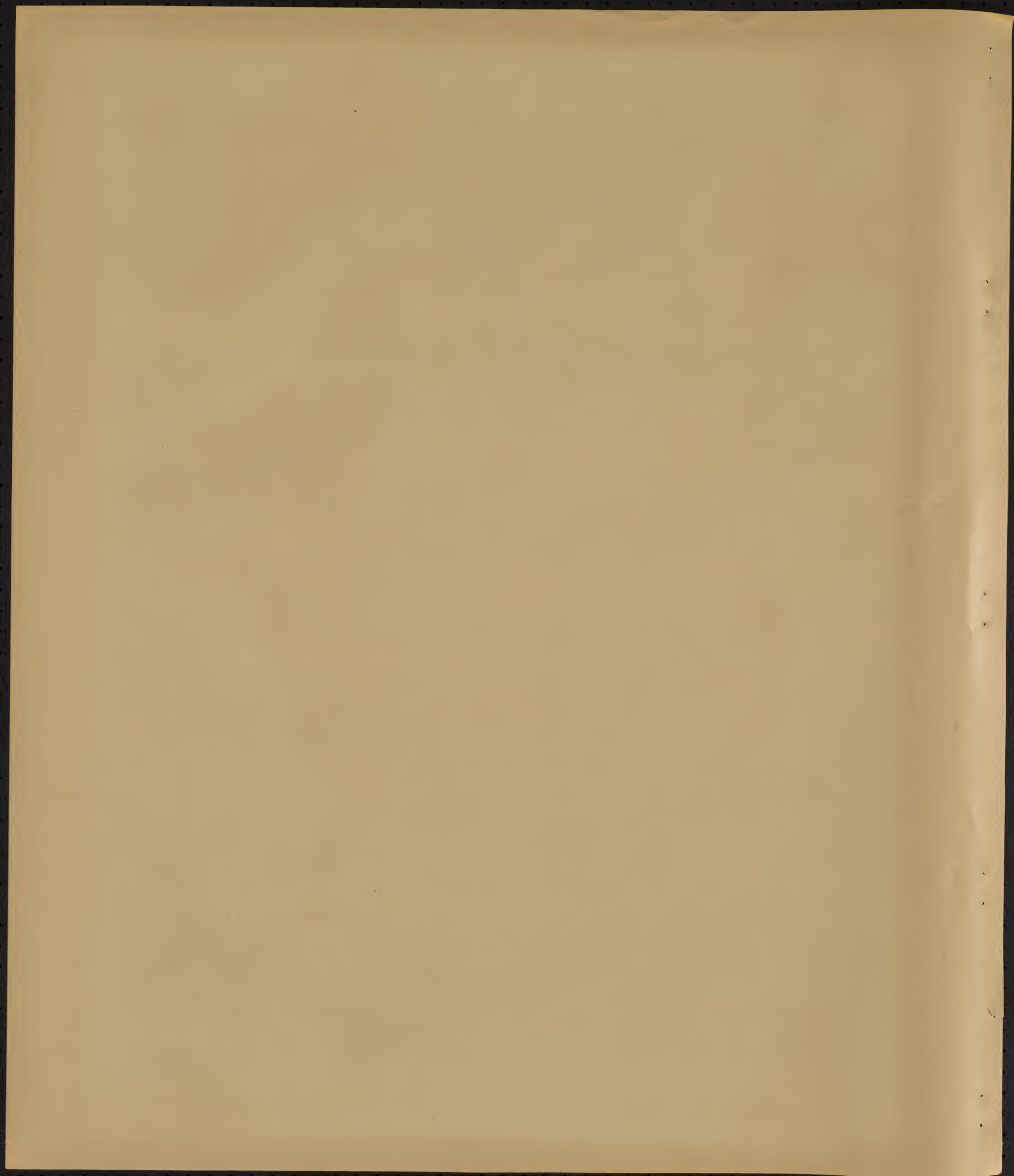








GEOGRAPHIC DISTRIBUTION
OF
MONTEREY PINE
PINUS RADIATA DON
Altitudinal range: From near sea-level to 4,000 feet
(Limited occurrence above 1,000 feet)







Pinus rigida Mill.







SOUTH AMERICA

